Candidate's Name: ……...

Signature: ……

545/1
CHEMISTRY
Paper 1
2024
2 hours

CHEMISTRY DEPARTMENT EXAMINATIONS BOARD

Uganda Certificate of Education

CHEMISTRY

Paper 1

2 hours

INSTRUCTIONS TO CANDIDATES:

This paper has **six** *examination items which are divided into* **two** *sections;* **A** *and* **B.**

Section **A** *has* **two compulsory** *items. Answers to section* **A must** *be written in the spaces provided.*

Section **B** *has* **two parts; I** *and* **II.** *Answer* **one** *item from* **each** *part.*
Answers to section **B must** *be written in the answer booklet*(*s*) *provided.*

Answer **four** *items in all.*

Any additional item answered will **not** *be scored*

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1	**2**	**3**	**4**	**5**	**6**

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Turn Over

SECTION A

Answer **all** *items from this section in the spaces provided.*

Item 1

Rocks found in Kericho village have been found to be containing an isotopic substance **X** that slowly undergoes a nuclear process emitting fast moving electrons and as well as electromagnetic waves of short wave length. The government has planned to evacuate the locals of this village to another area in order to make use of this substance.
However the locals have refused to be evacuated claiming that this rocky area has been their place of worship for over a year.

Task:

As a government official with vast chemistry knowledge.

(a) Help the locals to understand;

(i) The category of substance **X** contained in the rocks (*02 scores*)

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(ii) How the government will make use of the substance **X** to solve societal challenges. (*02 scores*)

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(b) Explain to the locals the dangers they might face in case they refuse to be evacuated from the village. (*05 scores*)

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Item 2

Kasingye has just started collecting plastics in order to sell them and earn a living. He collected a large amount of plastics which he took to plastic processing factory that only deals in reshaping plastics.
However, he was surprised that some of his collected plastics were rejected while others were accepted as he thought that all plastics are same.

The factory manager told him that they sort out plastics depending on their qualities and properties.

Task:

Use your chemistry knowledge to help Kasingye understand;

(a) (i) The varieties of plastics that led to some of his collected plastics being accepted while others rejected. (*03 scores*)

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(ii) The validity of some plastics being accepted. (*04 scores*)

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(b) Explain to Kasingye how his actions are of great importance to the environment of the area where he lives. (*02 scores*)

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SECTION B

Part I

Answer **one** *item from this part in the answer booklet*(*s*) *provided.*

Item 3

Bukenya is a well-known local investor in Kalot village whose locals use borehole water for washing clothes. He has planned to set up a soapless detergent manufacturing plant in the village with high hopes of maximizing his annual profits. He has assured the LC1 chairman that his plant will have a minimal impact to the village environment.

However the locals would like to know how the production process will be carried out and how the plant will impact their village.

You have been entrusted by the LC1 chairman to sensitize the locals about plant during a village meeting

Task:

Prepare a write up that you will deliver during the village meeting. (*11 scores*)

Item 4

Iron is used to make steel bars that reinforce the strength of concrete in building. Due to increased demand for steel bars countrywide, the government has hired an investor to setup an iron manufacturing plant in Gangu town which has large quantities of iron rich rocky ores. The investor has assured the government will have a minimal impact to the town environment.

The chemistry club members at your school would like to know how the production process will be carried out and how the plant will impact their town. The chemistry club president has appointed you to sensitize the club members.

Task:

Prepare a brief message you will deliver during your presentation. (*11 scores*)

Part II

Answer **one** *item from this part in the answer booklet*(*s*) *provided.*

Item 5

Following the discovery of crude oil in Albertine region, the Uganda ministry of energy and mineral development has setup an oil drilling project which will ensure that this natural resource is sustainably tapped off for the benefit of the whole country. However some of the locals have become rebellious to the project claiming that this natural resource only belongs to them and have vowed to smuggle it using various means and this has attracted the attention of officials in the ministry.

The officials have planned to organize a regional meeting to sensitize the locals about sustainable use of the natural resource in their area.

Task:

As one of the ministry officials, prepare a write up you will present to the locals during the regional meeting. (*11 scores*)

Item 6

Natural resources have been destroyed as a result of human activities and increasing population. This has attracted the attention of officials from the National Environment Management Authority (NEMA).

The officials have planned to create awareness to people countrywide through organizing various workshops in different regions of the country.

Task:

As a chemistry student, prepare a short presentation that you will deliver during a workshop organized in your area. (*11 scores*)